Summary testimony
James E. Rogers
Chairman, President and CEO
Duke Energy Corporation
Before the House Subcommittee on Energy and Air Quality
Committee on Energy and Commerce
U.S. House of Representatives
March 20, 2007

Duke Energy Corporation is one of the largest generators of electricity in the United States, owning nearly 37,000 megawatts of capacity, half of that coal-fired. The Charlotte, North Carolina company serves nearly four million electric customers in five states and, in 2006, produced nearly 150 million megawatt-hours of electricity with 71 percent dispatched from coal units.

Mr. Rogers has testified on a number of occasions before House and Senate panels on issues relating to environmental and energy policy. In this testimony, he emphasizes the need for Congress to act now to regulate greenhouse gas emissions, while being mindful of the need to continue the use of coal to produce electricity. Legislation should encourage innovation and investment in clean coal technologies, such as carbon capture and storage that reduce emissions from existing plants and bring new technology to market.

Greenhouse gas legislation that is both environmentally responsible and economically efficient must be based on economy-wide regulation. A single CO_2 price established through a cap and trade program will unleash the power of the market to adopt creative, cost-effective responses across all economic sectors. That's good for the environment and the consumer.

Legislation needs to take the long view. Unlike the Clean Air Act, which envisioned a two-phase reduction program over 10 years, climate change is a decades-long commitment that will, over time, fundamentally impact how we produce and use energy. Congress, recognizing technology needs to be developed and the economy prepared, should employ a "slow, stop, reverse" strategy, saving the deepest reductions for later, when the technology is available.

Some regions of the country are more dependent on coal than others and they stand to be disproportionately affected by carbon regulations. Congress recognized these disparities as it crafted the Clean Air Act Amendments of 1990 and should use a similar cap and trade approach, allocating allowances to these disproportionately affected parties. Allowances should be allocated on the basis of recent historical fuel-adjusted heat input and, particularly in the early years of the program, the majority should be allocated at no cost. Proceeds from a limited pool of auctioned allowances should be earmarked for technology development, assisting distressed industries and communities that suffer lost value and low-income customers. To further protect the economy, Mr. Rogers advocates that Congress employ a safety valve mechanism.

Mr. Rogers believes one must adopt a suite of options to address climate change including renewables such as hydro, wind and biomass, and nuclear and energy efficiency. But critical to the nation's energy independence is finding the right "next generation" technologies that will keep coal in the generation mix for decades to come. He looks forward to working with the Congress as it debates the details of the landmark legislation to come.

TESTIMONY OF JAMES E. ROGERS
CHAIRMAN, PRESIDENT AND CEO
DUKE ENERGY CORPORATION

BEFORE

HOUSE SUBCOMMITTEE
ON
ENERGY AND AIR QUALITY
ENERGY AND COMMERCE COMMITTEE
MARCH 20, 2007

Chairman Boucher and members of the subcommittee, I would like to thank you for inviting me to share my thoughts this morning on how Congress can balance the need to protect our climate with the necessity of continuing to use one of our nation's most important natural resources – coal.

My name is Jim Rogers and I am Chairman, President and Chief Executive Officer of Duke Energy Corporation, one of the nation's largest generators of electricity. Duke Energy is headquartered in Charlotte, North Carolina, serving nearly four million customers in five states. In just 14 days, we will be celebrating the first anniversary of the Duke-Cinergy merger which brought together two strong companies – one in the Southeast and the other in the Midwest – with outstanding customer service and top-flight operational skills.

The new Duke Energy now owns nearly 37,000 megawatts in U.S. generating capacity with about half of that capacity coming from coal-fired power plants. More importantly perhaps than capacity, is that in 2006, Duke Energy produced nearly 150 million megawatts-hours of electricity with 71 percent of it dispatched from coal units. Our customers expect and our regulators require us to dispatch the least-cost available power and that almost always means coal.

We are mindful that our reliance on coal brings with it a responsibility to address the environmental footprint it leaves. It is that commitment that brings me to your hearing today.

Some have questioned how, as the third largest consumer of coal, I could be so outspoken on the need to address climate change through legislation. At this point, I view the science as having resolved two important questions: The earth is warming and human activities are contributing. The scientific debate has now moved to questions of timing and ultimate impact. In any event, it is my judgment that we need to act now to begin reducing our carbon footprint.

I am confident that Congress can structure climate legislation in a way that protects our economy and our long-term outlook for coal, advances technology and leaves our environment in a better place for our grandchildren. Congress can and should structure legislation in a manner that promotes innovation, is creative in its ability to encourage investment in new and emerging technologies and fairly distributes the costs that will be necessary to achieve environmental improvement.

The success we achieved through a market approach in the Clean Air Act Amendments of 1990 demonstrated that a clean environment and a healthy economy are not mutually exclusive. It took political courage to eschew the traditional command-and-control regulatory system and create a flexible cap-and-trade system with tradable allowances. But, Congress recognized the power of the marketplace and the requirement that utilities seek the least-cost option to comply and created a program that led to cleaner air at a much lower cost for consumers.

There are other lessons from those days that are instructive as we move forward to regulate greenhouse gases.

First, while Congress recognized that it was in the national interest to significantly reduce sulfur dioxide emissions from coal-fired power plants, it realized utilities needed time to comply. Congress responded by creating a two-phase program with the first phase starting five years after enactment and the second five years after that. This allowed utilities time to create a compliance plan, move it through their state regulatory process, finance it and install the necessary equipment. The phased approach also prevented customers from being hit with sudden electricity rate increases.

Second, Congress addressed the regional challenges that the Clean Air Act posed to those areas of our country that rely most on coal as the primary fuel to generate electricity. Through its design of the emissions allowance system, Congress ensured allocations went to generating facilities and their customers that needed them, based on fuel input. These ensured regions such as the Midwest, Southeast and the Plains states did not suffer a disproportionate economic impact. These same regional disparities exist today and should be addressed in a similar manner in greenhouse gas legislation.

Third, and critical to today's hearing, Congress recognized the need to maintain fuel diversity and the economic viability of America's coal-generating fleet. Then, as now, the key to coal's viability in an ever-changing regulatory environment, is technology. The market, federal incentives and time --- all were important then and even more so now in crafting a national greenhouse gas strategy that ensures our ability to use the more than 200 years of domestic coal that remains unmined.

As the nation's third largest utility emitter of greenhouse gas emissions, I am engaged in this debate about climate because I believe that those who stand to be most affected and most at risk must be involved to help shape an outcome that achieves environmental benefits while protecting our customers from economic harm.

Encouraging and funding innovation

As the door opens to what will become a carbon-constrained economy, we face a clear challenge that must be overcome. Unlike the days preceding passage of the Clean Air Act, we have no obvious technological solutions that are available today to scrub carbon out of the flue gas. There are promising new technologies being researched and developed, but right now there is no machine that we can add to the back or front end of our coal plants that will eliminate carbon dioxide emissions.

We do have existing products that can be pulled off the shelf such as compact fluorescent light bulbs, energy star refrigerators, home insulation and hybrid vehicles if the right economic or regulatory incentives are put into place. A market-based approach like a cap and trade program can change the relative competitiveness of the various choices faced in consumption and investment. High-emitting energy sources or uses will become less desirable compared to low-emitting choices. The changing market conditions will put more of these products into consumers' hands.

However, the carbon price signal that the market will create is not enough to fund large scale demonstration of "near ready" technologies, much less the development of longer term next generation technologies that will be required in the latter half of the century.

Tax incentives are an important component of the technology solution, and Duke is excited to have received a $130 million investment tax credit to help build an integrated gasification combined cycle (IGCC) plant in Edwardsport, Indiana. IGCC is a promising technology that needs wider utility-scale demonstration. Congress rightly recognized this by authorizing investment tax credits in the Energy Policy Act of 2005, acknowledging a public-private sector partnership was needed to move this technology forward more quickly.

I encourage Congress to closely review the long-term funding programs that help promote the development of IGCC and other advanced coal technologies. You should determine where research programs can be combined and efficiencies gained and look for creative ways to further reduce risk taken on by utilities that are building new or emerging technologies.

Carbon sequestration

Carbon capture and storage (CCS) from coal-fired power plants is a near-ready technology that is critical if we are to achieve our environmental goals while continuing to preserve the fuel diversity that is so important to our economy. CCS takes the CO_2 captured from the power plant and channels it underground for permanent storage in deep geological formations. But, this storage capacity is not available everywhere. And, contrary to some statements I've seen recently, this technology is not fully developed and ready for deployment.

We believe CCS will prove to be one of the least cost ways to reduce CO_2. Duke Energy's commitment to CCS includes membership in three DOE-funded carbon sequestration consortia and a project this summer that will inject a large quantity of carbon dioxide deep into the ground at our East Bend, Kentucky power plant. The National Energy Technology Laboratory (NETL) in DOE's Office of Fossil Energy manages these and four other consortia, creating a nationwide network to help identify the best technologies, regulations and infrastructure needed for carbon capture and storage.

These partnerships will house multiple small scale projects that will provide invaluable information on siting, monitoring, evaluation and public acceptability of carbon sequestration. Public acceptability includes legal and liability issues which must be settled before any company would feel comfortable moving forward with a large-scale CCS project.

Even before carbon can be sequestered, it first has to be captured – a technology still in its infancy when applied to utility operations. Current technology, if one were to install it in a 600-megawatt supercritical plant, would consume about 174 megawatts of capacity and, on an IGCC facility, about 78 megawatts. Clearly, we need considerable work to reduce those requirements.

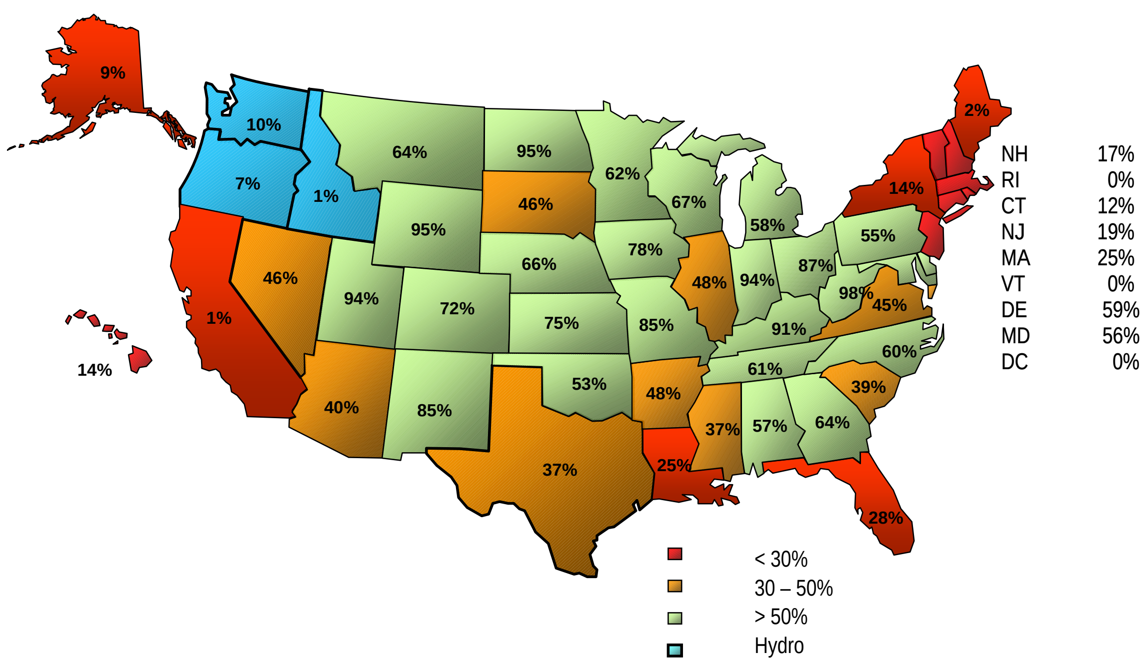
Congressman Boucher, I understand that you have been exploring ways to help offset the cost of carbon sequestration for industries pursuing coal to liquid technology. I believe that such incentives should be expanded to utilities or industry that takes on the role of capturing and sequestering carbon from coal fired power plants. Again, reducing the risk helps to advance technology. Congress can and should continue to play a major role in ensuring proper financial support for developing technologies that can lead to the successful utility-scale capture and storage of greenhouse gas emissions.

<u>Technologies for the current coal fleet</u>

There are more than 1,500 pulverized coal units in the U.S. today, providing just under 336 gigawatts of generating capacity to consumers in 47 states. Clearly, technologies must be developed to mitigate carbon emissions from these facilities, many of whom have many useful years of life left. We need as strong a commitment to these plants as we do to the shiny new ones we anticipate building. In my view, it is risky to place your bets on just one technology, which is why I believe we need to develop the carbon emissions technology to keep these plants operating.

Percent of Total Generation from Coal (2005)

National Average: Coal Share of Total Generation = 50%



Source: Energy Information Administration, November 2006.

.

Energy efficiency

In addition, I recently testified before the Senate Energy Committee on the need for a restructured look at the way we view energy efficiency. At Duke Energy, we call energy efficiency the "fifth fuel". Most state regulatory regimes include inherent disincentives for energy efficiency efforts. We're working to change that paradigm by encouraging regulators to allow utilities to earn the same amount for saving a watt as they would for generating a watt. Taking variable costs such as fuel and emission costs into account, the save-a-watt model we are proposing produces a triple win for customers, companies and the environment.

While state public service commissions must take the lead, Congress can encourage states to review ratemaking practices as they relate to energy efficiency and methods of keeping the utility indifferent to building plants or saving electricity. I encourage you to include such considerations in any climate legislation.

An economy-wide market driven solution

In addition to advancing technology, I believe a comprehensive, economy-wide greenhouse gas cap and trade program is the right approach. The time to act is now because the sooner we get started, the more likely we can establish a less expensive program that starts gradually and becomes more aggressive over time.

It is essential that a carbon price signal be established through a national economy-wide cap. We have already seen bills introduced that apply only to the utility industry. These bills address only a third of U.S. greenhouse gas emissions and suggest a one-toe-in, one-toe-out policy ambivalence that is less environmentally effective. An economy-wide approach would produce a more vibrant carbon market, encouraging more innovation and sounder economic choices – all good for the consumer.

A single CO_2 price would unleash the power of the market to address this issue across all economic sectors. A defined national limit of greenhouse gas emissions creates the supply and an assigned allowance for each ton of carbon emitted creates the demand. Together, they create a carbon price that will become a factor in our investment decisions, and emissions will decline as the most cost-effective strategies are selected.

Long-term solutions better than quick fixes

It is important that Congress pay close attention to the emissions trajectories proposed in the various climate bills that have already been introduced. While we are anxious to get started now, we are very concerned that some bills propose steep reductions immediately, apparently disregarding what is technically possible and the impacts on electricity prices.

The reduction of greenhouse gas emissions should be considered a decades-long commitment. We have a carbon-based economy today and, to attempt to suddenly decarbonize it, would result in severe economic repercussions.

We advocate first slowing the growth of emissions, halting their growth and then beginning absolute reductions. Abrupt reductions would require abrupt solutions such as turning quickly to lower-carbon intensive fuels which would not only increase the cost of electricity but also cause serious damage to the coal industry.

The ripple-effects throughout the economy would be unacceptable and, in my view, unnecessary. We need to address this problem wisely, priming the economy by starting with some prudent reductions now but waiting until the technology is ready to make the big changes that must come.

It is critical that Congress align the reduction path it charts with the technological realities that exist. While I am very optimistic that American ingenuity and enterprise will rise to the task with innovations that maintain the viability of our coal fleet, I urge Congress to periodically examine the state of the technology and determine if that balance has been maintained. If the technology development were to lag and the reductions path no longer realistic, you need the flexibility that allows you to appropriately adjust the policy. Legislation needs to specifically require a periodic technology review and a reset provision so you have the option to continually oversee this evolution to a decarbonized economy.

Allowance allocations key to fairness

The allocation of emission allowances and the policies Congress set in crafting a greenhouse gas bill will have a profound effect on how certain regions of the country are able to absorb costs.

Congress recognized this back in 1990 and took responsibility for making policy decisions that were successful in reducing emissions and saving the coal-based regional economies. You face that same decision again although, this time, the stakes are even higher.

The decision on how to allocate allowances is strictly an economic one. It does not impact the cap and emissions trajectories you choose – it affects the ability of those most impacted to pay for those choices. Emission levels will be the same under any allocation scheme, set by the cap. You decided, back in 1990, to use those allowances to provide a soft landing for those regions disproportionately impacted by the new sulfur dioxide policy. Distributing the majority of allowances to coal-fired generation was a fair decision then and a fair one now.

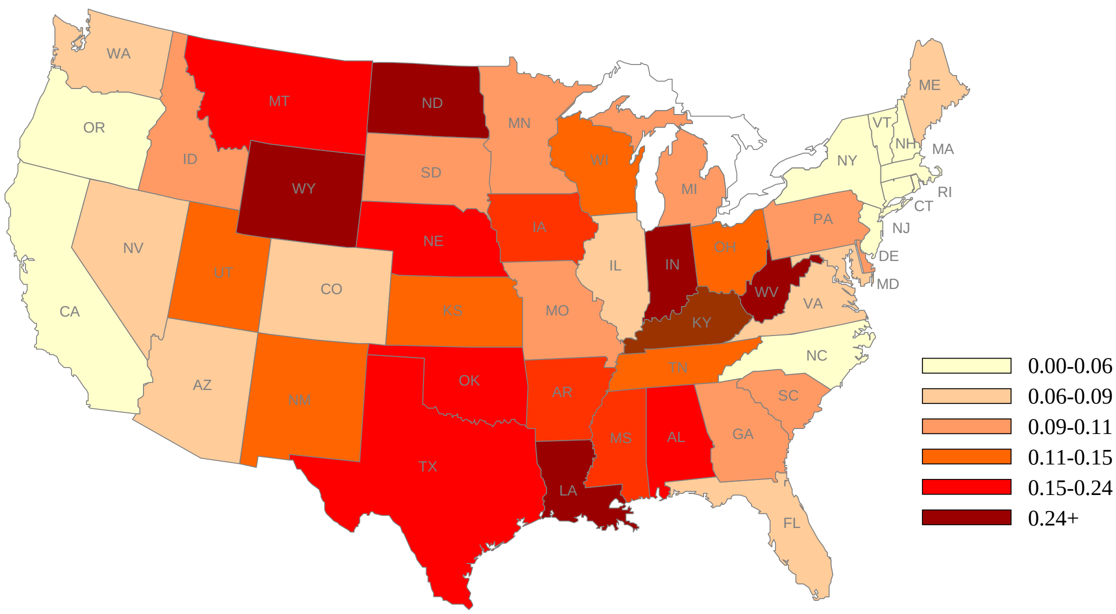
Allocations should, first and foremost, be distributed on the basis of recent fuel-adjusted heat input, providing allocations where they are needed – not to generators who emit no greenhouse gases. This allocation method mitigates rate and other cost shocks that otherwise would be felt by the state and regional economies that will bear the lion's share of the costs. The allocations won't enrich companies like Duke Energy; instead the benefit will flow directly to our customers and prevent unacceptably high rate increases.

Conversely, allocating free allowances to non-emitting generation would constitute a windfall gain for those generating assets that would already be benefited under carbon regulation. This so-called "output based" allocation formula would be simply a wealth transfer between fuels and regions and should be rejected, as it has been continually by Congress and the EPA, as unsound public policy.

Arguments that output-based allocations will encourage the deployment of non-emitting generation are without merit. What we're talking about here is the generation on the ground – assets serving our nation's electric needs based, powered by fuels that made the most economic sense depending on location and availability. In the future, new non-emitting technologies will be deployed because the changed regulatory environment and rising carbon price signal will make them the most economic choices, regardless of how Congress assigns allocations to existing units.

Input-based allocations will help those states and customers most vulnerable to the legislation's program costs. These carbon-intensive states are notably the home of most U.S. manufacturing and agriculture interests.

Carbon Intensity of Economic Output, Commercial and Industrial Sectors, 2001
(Metric tons carbon per thousand $2005)



Source: Abt. Associates (forthcoming), Carbon Emissions Economic Intensity Index: Development and Technical Enhancements, prepared for Climate Protection Division, U.S. Environmental Protection Agency: Washington, D.C.

It is our view that particularly in the early stages of the program, a higher percentage of allowances should be allocated to utilities with a smaller percentage set aside for auction. Congress should be mindful to try and keep the value of the nation's generating assets intact as much as possible, which a higher allowance allocation will facilitate. We do support a limited auction of allowances whose proceeds we envision being used for research and development of new coal technologies, compensation to disproportionately affected industries and communities that suffer lost value and low-income assistance.

We believe allowance allocations for utilities should be locked in for a period of time and then phased out gradually to full auction. Again, this is an economic policy – not an environmental one. The cap will continue to fall and so will utility emissions meaning the environmental goals will continue to be met.

I have already mentioned the importance of protecting coal-intensive areas of the country with an appropriately designed cap and trade system. Clearly, those regions, their utilities and customers will be required to make the largest share of reductions. This may mean closing some generating plants and altering the technology choices on others as well as spending substantial sums on energy efficiency and clean generating sources.

Utilities in states where there is less of a coal presence, conversely, will be required to do much less and, so, will have to spend much less. Awarding allowances to these generators at the expense of those generators who need those allowances would be nothing more than a wealth transfer with those customers in coal regions paying twice – once to pay either for new generation or new technology and, second, to pay for the allowances sold by utilities who didn't need them to those who did.   Such a policy would not change the cap - it just makes meeting the cap and making additional reductions more expensive.

Cost Control Mechanism

Finally I would encourage Congress to consider additional ways to shield the economy from unacceptably high prices and unexpected transient price spikes which we've seen from time to time in the sulfur dioxide market.

A safety valve is well suited to provide this additional protection. This mechanism would make additional allowances available to the market at a predetermined price. It raises the emissions cap temporarily but it also protects consumers from unacceptably high costs.

Environmentalists may argue that the safety valve violates the integrity of the emissions reduction program. But remember – the real objective of reducing greenhouse gases is not the short-term reduction goals, but the long-term concentration of CO_2. Especially in the program's early years, where reductions are only somewhat less than they'd be in a business as usual world, long-term concentrations are little impacted. Those emissions reductions that are not met in the program's early years can be more inexpensively achieved in later years because of the improvement in technology.

Finally, some have expressed concern that a safety valve program would prevent linkage of the U.S. program to a wider carbon market. It is true that, if the safety valve is deployed and the U.S. releases more allowances into the market, that we will not be able to sell our allowances into a higher priced market like Europe.

But we lose nothing in this bargain because selling into Europe would only drive our CO_2 prices higher, while lowering those in Europe. Nothing about the safety valve would prevent us, however, from buying lower-priced offsets or allowances from other countries. In the longer term, we do want to link with all markets globally, but for the time being, there is little to be lost by missing opportunities to sell to Europe.

If opponents are correct in their claim that offsets or energy efficiency will ameliorate the costs of an aggressive reduction program, then the safety valve will never deploy. But if they are wrong, the American consumer will still be protected.

The safety valve should be only temporary. While it should be low enough to protect the economy, it should escalate steeply enough so as to ensure clean coal technologies, including CCS, are not held up. It is in the interest of the coal industry and of the coal-burning utilities to ensure rising carbon prices push us quickly to CCS and other technologies that can address carbon emissions from existing facilities.

Comprehensive solutions needed

In preparing our company to operate successfully under carbon caps, we've come to realize that there is no-one-size-fits-all approach to reducing greenhouse gas emissions. It will take a suite of actions to lighten our nation's carbon footprint. As I've often said, "there is no silver bullet – just silver buckshot".

In addition to advanced coal, we need a full range of renewables – wind, solar, biomass, hydro, geothermal and biogas. We need a new commitment to nuclear energy. I firmly believe we don't get where we need to be without building a new generation of zero-emission nuclear plants. And, importantly, we need to promote energy efficiency by making fundamental changes in our regulatory regime so as to treat saved energy the same as produced energy.

Congress has a unique opportunity and significant obligations to fulfill in dealing with the carbon issue. You have a blank slate to set this country on a course of technological innovation along with substantial environmental protections. You also have the ability to adopt creative methods of encouraging the discovery and development of new technologies, allowing us to move much faster from the lab to ground breaking ceremonies.

I am encouraged that this Committee has begun a thorough examination of this critical issue and hope that you do so with the diligence that is necessary and within an appropriate timeframe that our environment deserves. I thank you for the opportunity to share my views and look forward to working with you.